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A Joint Meteorological, Oceanographic and Sensor Evaluation Program
for Experiment S193 on Skylab

EPN 550

for the period through March 13, 1974

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Monthly Plans (City Coll. of the City of
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Monthly Plans and Progress Report

Reports prepared

Two reports prepared at the University of Kansas on this contract are attached to this report. One is Prof. R.K. Moore's statement to Congress on S193 to date. The backscatter data in HH show a dependence on the square of the wind speed from 5 to 50 knots.

The second report by A. Sobti and J. Young contains the results of the reduction of the Skylab II data so as to put it in useful form. The coordinates of each measurement cell and the position of the spacecraft are the values needed at the Institute to provide the wind speed and direction for each set of backscatter measurements.

Backscatter results

A new study of capillary waves made in Japan has reached us. It seems to explain the wind speed power law dependence for backscatter, and why this power law changes from one experiment to another. The v^2 law found by our preliminary analysis of Skylab II is not at all surprising if this capillary wave study is correct. More will appear shortly on this subject.

Surface Truth and SLIV

The wind and wave data provided by the cooperative observer worldwide network as described in a recent letter to you is coming in from France, England and Canada the Fleet Numerical Weather Facility and has reached us from Dr. McClain's group. We have a fantastic data base for Skylab IV.

S193 appears to have lost a total of 20 db. Dr. Moore has pointed out that cross polarized returns of - 40 db were often measured and that the copolarized returns only rarely, and for large θ and low wind; drop below - 20 db. Therefore a good part of the copolarized backscatter data from Skylab IV should be useful. This is particularly true for the high wind nearly upwind-downwind data obtained on Jan-

uary 7, 1974. We have a complete summary of all of the SLIV passes and are beginning a preliminary analysis of the data in preparation for the Spring AGU session on Skylab.

Wave Data

The waves were very high during some of the SLIV altimeter passes. We have the capability of producing spectral hindcasts of the waves throughout all of SLIV. Moreover, Laser wave records and ship-borne wave records are available at the time of Skylab passage and for 3 hour intervals throughout January. An extensive test and verification program is planned for this phase of the analysis, so that the altimeter wave form can be compared with the wave conditions.

Plans

A meeting at the Institute between the University of Kansas and City College scientists, will be held next week to plan the analysis of SL III and SLIV data. Papers will be presented on Skylab results on Friday, April 12th at the AGU meeting in Washington, D.C. Abstracts have already been provided your office.